disease prevention news

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Eighth HPS Case in Texas

In February 1997, the Texas Department of Health (TDH) confirmed the eighth case of hantavirus pulmonary syndrome (HPS) in Texas. The patient, a 50-year-old white male from Hunt County, had onset of nausea and vomiting, anorexia, fever, chills, and malaise on January 19, 1997. When the patient sought medical care on January 23, he was told he probably had a stomach virus and was given promethazine hydrochloride. The next day, he was admitted to a local hospital for severe respiratory distress.

On admission the patient had a tympanic temperature of 98.2°F, pulse of 127 beats/min, respiratory rate of 40 breaths/min, and a blood pressure of 75/21 mm Hg. He was diaphoretic, and a chest x-ray showed diffuse bilateral infiltrates. Initial clinical laboratory results showed the following values: pO_2, 51.7; sodium, 127 mEq/L; blood urea nitrogen, 36 mg/dL; glucose, 150 mg/dL; creatinine, 2.4 mg/dL; albumin, 2.7 g/dL; aspartate aminotransferase, 102 IU/L; lactate dehydrogenase, 2,489 IU/L; and creatinine phosphokinase, 760 IU/L. His white blood cell count was 19,100/cu mm; red blood cell count, 6,960/cu mm; hemoglobin, 22.3 g/dL; hematocrit, 64.3%; and platelet count, 19,000/cu mm. His prothrombin time was 14.4 seconds, and his partial thromboplastin time was 53.4 seconds.

The patient was transferred by air to a tertiary care hospital for presumptive sepsis and disseminated intravascular coagulation. On admission, he was obtunded and intubated. He was placed on pressors for continued hypotension and multiple antibiotics for sepsis. The patient died the morning of January 25. Serum obtained at autopsy was sent to the University of New Mexico Medical School; it contained antibody to Sin Nombre virus.

The patient could have been exposed while at work or at home. He was an appliance repairman and often encountered rodents, rodent droppings, and nesting material while moving large appliances to work on them. Sometimes he cleaned the area around these appliances prior to making repairs. Also, during the 2 weeks prior to onset, he had trapped several mice at his home. He did not wear gloves when he handled the sprung traps or the trapped animals or when he cleaned up around the traps. Around Christmas, the patient had swept his workshop, a tin building attached to the main house. According to his family, this activity always raised a great deal of dust.

Hantaviruses, the agents of hantavirus pulmonary syndrome, are transmitted to humans when aerosolized excreta from an infected rodent is inhaled. Many species of mice and rats are reservoirs for hantaviruses. HPS in the US has most often been caused by Sin Nombre virus, which is carried by deer mice (*Peromyscus maniculatus*). Other hantaviruses have been responsible for at least 6 cases: 3, including 2 in Texas, were caused by Bayou virus, which is found in rice rats (*Oryzomys palustris)*; 2 were caused by New York virus, which is carried by white-footed mice (*Peromyscus leucopus*); and 1 was caused by Black Creek Canal virus, associated with cotton rats (*Sigmodon hispidus*). In addition, there are at least 5 North American hantaviruses that have not been associated with human disease: Bloodland Lake virus, El Moro Canyon virus, Isla Vista virus, Muleshoe virus, and Prospect Hill virus.

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Also in this issue:

Nationally at least 161 HPS cases have been reported from 27 states. Sixty percent of the cases have been male. Patients have ranged in age from 11 to 69 years. The case-fatality rate is about 47%. Including the Hunt County case described above, 8 HPS cases have been reported in Texas. The first case occurred in Angelina County in 1993; the second, in Kleberg County, was reported in 1994. Two cases were reported in 1995: one each from Deaf Smith and Jefferson Counties. Three cases were reported in 1996: one each from Potter, Gaines, and Jefferson Counties. Three of the 8 patients survived their illnesses.

Initial symptoms usually appear 2 weeks after exposure. Four to five days after onset of a flu-like illness, infected patients usually present with fever, tachypnea, tachycardia, hypotension, and rales or crackles. Signs/symptoms include fever, myalgias, chills, cough, nausea, vomiting, headache, diarrhea, malaise, shortness of breath, dizziness, arthralgia, back or chest pain, abdominal pain/tenderness, and sweats. Abnormal laboratory findings include elevated lactate dehydrogenase, aspartate aminotransferase, and alanine aminotransferase levels; an elevated hematocrit; and thrombocytopenia. Health care providers should call the Texas Department of Health at (512) 458-7676 to report a possible case and receive advice about testing. Blood samples (both red top and EDTA tube) should be drawn and any biopsy or autopsy specimens saved.

For further information contact Julie Rawlings at (512) 458-7228.

Prevention

To prevent exposure to hantaviruses, do not touch rodents, their droppings, or their urine with bare hands. Before disposing of dead rodents, spray a contact insecticide that kills fleas on the surrounding area. Then, using rubber or disposable gloves, pour or spray disinfectant on the rodent, rodent droppings, and rodent bedding. Place the rodent or associated material, including all the items used in the cleanup procedure, in a plastic bag and secure it. Place this bag in a separate bag and dispose of everything in an outdoor garbage can. Do not send rodent samples to TDH for hantavirus testing. (The TDH Laboratory performs hantavirus testing only on samples collected during the TDH Zoonosis Control surveillance activities.) *Call TDH General Sanitation Division at (512) 834-6635 with further questions regarding rodent control.*

Prepared by Julie Rawlings, MPH, Infectious Disease Epidemiology and Surveillance Division.

Hepatitis Brochures

Three new simplified-language hepatitis brochures are now available from the Texas Department of Health. Printed in English on one side and Spanish on the other, these 3 brochures are intended to provide information for the general public in clinics and physician's offices. *Hepatitis A Can Be Prevented!* (Stock #6-12A), *Hepatitis B Can Be Prevented!* (Stock #6-12B), and *Hepatitis C Can Be Prevented!* (Stock #6-12C) may be ordered as follows: TDH staff submit an AG-30 form; others send a written request to TDH, 1100 West 49th Street, Austin, TX 78756-3199. Be sure to include the stock number in the order.

Hantavirus Pulmonary Syndrome: CDC Case Definition

Clinical description

Hantavirus pulmonary syndrome (HPS), commonly referred to as hantavirus disease, is a febrile illness characterized by bilateral interstitial pulmonary infiltrates and respiratory compromise usually requiring supplemental oxygen and clinically resembling acute respiratory disease syndrome (ARDS)*. The typical prodrome consists of fever, chills, myalgia, headache, and gastrointestinal symptoms. Typical clinical laboratory findings include hemoconcentration, left shift in the white blood cell count, neutrophilic leukocytosis, thrombocytopenia, and circulating immunoblasts.

Clinical case definition

An illness characterized by one or more of the following clinical features:

- A febrile illness (ie, temperature >101.0°F [>38.3°C]) characterized by bilateral diffuse interstitial edema that may radiographically resemble ARDS, with respiratory compromise requiring supplemental oxygen, developing within 72 hours of hospitalization, and occurring in a previously healthy person
- An unexplained respiratory illness resulting in death, with an autopsy examination demonstrating noncardiogenic pulmonary edema without an identifiable cause

Laboratory criteria for diagnosis

- Detection of hantavirus-specific immunoglobulin M or rising titers of hantavirus-specific immunoglobulin G, or
- Detection of hantavirus-specific ribonucleic acid sequence by polymerase chain reaction in clinical specimens, or
- Detection of hantavirus antigen by immunohistochemistry

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

Laboratory testing should be performed or confirmed at a reference laboratory. Because the clinical illness is nonspecific and ARDS is common, a screening case definition can be used to determine which patients to test. In general, a predisposing medical condition (eg, chronic pulmonary disease, malignancy, trauma, burn, and surgery) is a more likely cause of ARDS than HPS, and patients who have these underlying conditions and ARDS need not be tested for hantavirus.

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Reprinted from: CDC. Case definitions for infectious conditions under public health surveillance. MMWR 1997;46(No. RR-10):16.

Editor's note: ARDS is also often defined as "adult respiratory distress syndrome."

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10th Annual Texas HIV/STD Conference

The Texas Health Foundation, in partnership with the Texas Department of Health Bureau of HIV and STD Prevention, is hosting the 10th Annual Texas HIV/STD Conference, to be held June 29-July 3 at the Hyatt Regency Hotel on Town Lake in Austin. The mission of this conference is

> To create cohesive partnerships in order to meet the challenges of HIV, AIDS, and STDs by providing information, skill building, and opportunities for idea exchange among persons living with these diseases and those who provide care, prevention, and other services.

The conference will feature over 70 sessions on topics such as service delivery, legal issues, community advocacy, universal voluntary testing, case management, and behavioral counseling. *For further information, including continuing education credits and registration details, contact Sylvia Watson at (512) 490-2535.*